



Hampton Roads Economic Quarterly

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About this Document

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Gas Prices in Hampton Roads

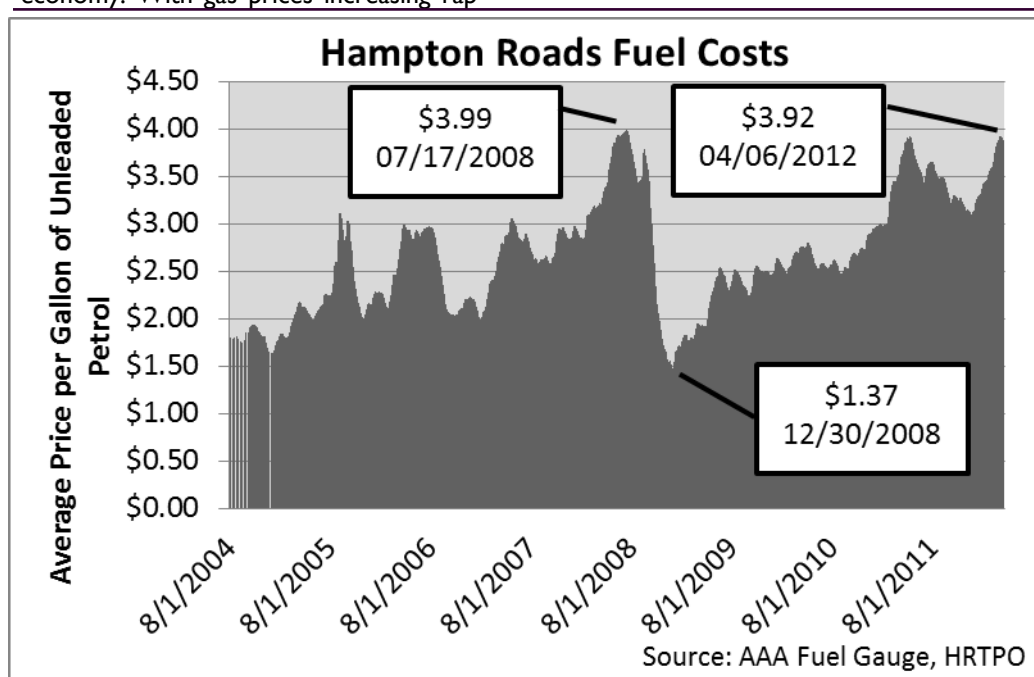
by James Clary, HRPDC Economist

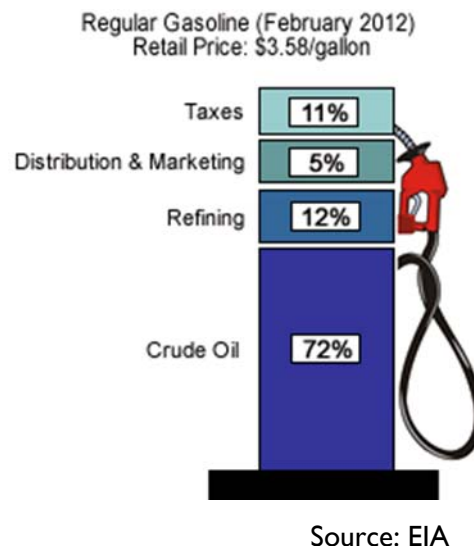
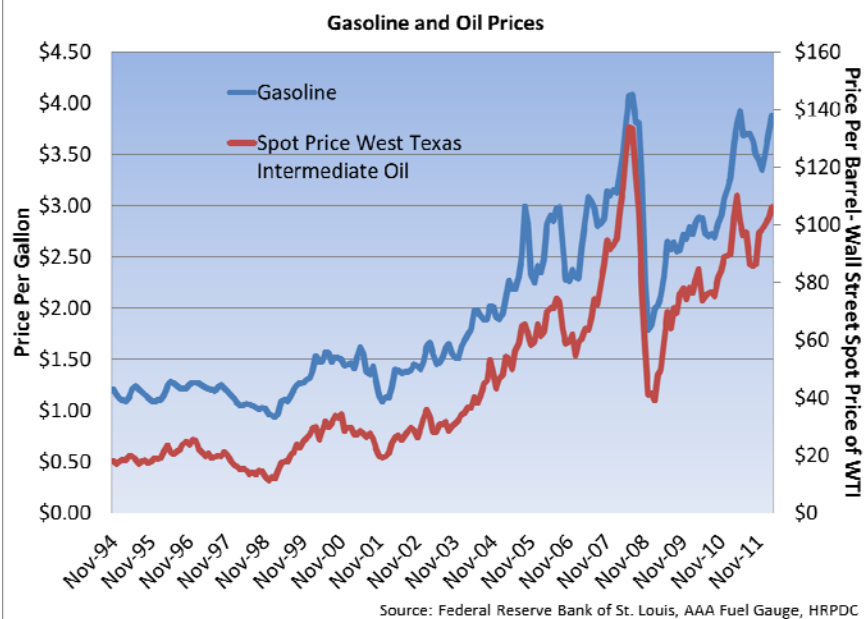
The Bureau of Labor Statistics (BLS) estimated that in December 2011, 5.3% of household expenditures went to gasoline purchases (and 5.5% of all expenditures went to all categories of motor fuels). As gas prices increase, they will represent a greater proportion of household expenditures, and a growing drain on individual finances. Changes in the cost of fuel drive both consumer confidence and the underlying economic fundamentals for both consumers and businesses. When transportation requires gasoline, as it typically does in America, then rising gasoline costs have a profound impact on the regional economy. Like many regions across the nation, the issue of fuel costs plays an important role in the local economy: for every dollar spent on fuel for its cars, one dollar is siphoned from the rest of the regional economy. With gas prices increasing rap-

idly in Hampton Roads, local businesses and consumers experience increased economic strain. Gas prices reached \$3.92 in April, just off the all-time peak of \$3.99 in 2008.

Determinants of Gas Prices

The same market forces that shape the price of gasoline nationally shape the price of gasoline regionally, and thus fluctuations in Hampton Roads' gas prices closely follow changes nationally. The national and international markets determine the price of oil and refined products due to the extreme portability of liquid fuels; the U.S. demonstrated this fact as it recently became an exporter of refined petroleum products again. The U.S. Energy Information Administration (EIA) estimates that distribution and marketing only constitute 5% of the cost of a gallon of gasoline, indicating that transportation represents a small obstacle for gasoline markets. Indeed, moving a gal-





lon of gasoline from refineries in Collins Mississippi to the Yorktown distribution terminal only costs 2.9 cents-per-gallon on the Colonial pipeline, and moving gasoline from the end of the pipeline in Houston only raises the transportation costs to 3.7¢.

The price of oil remains the most significant driver of the cost of gasoline, and as the price of oil increases, it becomes even more significant to the overall cost structure of gas. The EIA estimated that oil constituted 72% of the price of gas in February 2012. Furthermore, the noted fuel expert James Hamilton, an economist at University California San Diego, estimates that an increase of \$1 in the price per barrel of oil increases gas prices by 2.5¢ per gallon.

Common Scapegoats for High Gas Prices

Speculators— The highly important role that high oil prices have played in the price of gasoline has led to the concern that speculators have caused oil prices to be unnaturally high, whether inadvertently through trading or through malicious intent. Data reveals that oil costs on average \$11 to extract from the ground and currently has a market price of approximately \$100 per barrel. Most of the surplus goes to oil producers rather than speculators, particularly those that have a low cost of production.

A recent review of economic literature concerning speculators found, “existing evidence is not supportive of an important role of speculation in driving the spot price of oil after 2003. Instead, there is strong evidence that the co-movement between spot and futures prices reflects common economic fundamentals rather than the financialization of oil futures markets.” Fattouh, Bassam et al. “The Role of Speculation in Oil Markets: What Have We Learned So Far?” Journal of Economic Literature March 18, 2012

Refineries— Using the EIA data previously noted, Crude Oil constitutes 72% of the cost of gasoline while refining only constitutes 12%. The graphic in the top left of this page tracks how the price of gasoline in the US and Hampton Roads fluctuates with the spot price of West Texas Intermediate Oil (WTI). Refiners are actually in an extremely difficult business, squeezed between high capital costs and the high variable cost of oil (similar to another struggling industry, the airlines). While refiners have been selling products overseas, these sales are in response to demand. The Congressional Research Service noted that, because of the inelastic nature of gas consumption, refiners seem prepared to operate at a lower level of output rather than discount gas below the cost of production dictated by crude oil prices.

The closure of the Yorktown Refinery in Hampton Roads and several other refineries along the east coast demonstrates the difficult economic climate for the refining industry.

Fuel Specification and Hampton Roads

One important source of fuel costs in Hampton Roads results from the majority of regional localities participating in the Reformulated Gasoline (RFG) Requirement (reformulated gasoline utilizes oxygenates to a greater extent than conventional gasoline allowing RFG fuels to burn cleaner, though it causes a drop in miles-per-gallon efficiency of 1-3%). The cost of RFG gasoline is typically higher, nationally averaging 10¢ more than conventional gasoline, and 12¢ more since widespread adoption of ethanol. The EIA Lower Atlantic region (which stretches from West Virginia down through Florida) has a slightly different cost profile with the cost of RFG being 5.7¢ higher on average, but just for the period from March through July.

Virginia Localities which are Opt-In for the Reformulated Gasoline Requirement (RFG)

Charles City County	Newport News
Chesapeake	Norfolk
Chesterfield County	Poquoson
Colonial Heights	Portsmouth
Hampton	Richmond
Hanover County	Suffolk
Henrico County	Virginia Beach
Hopewell	Williamsburg
James City County	York County

What is Reformulated Gasoline (RFG)?

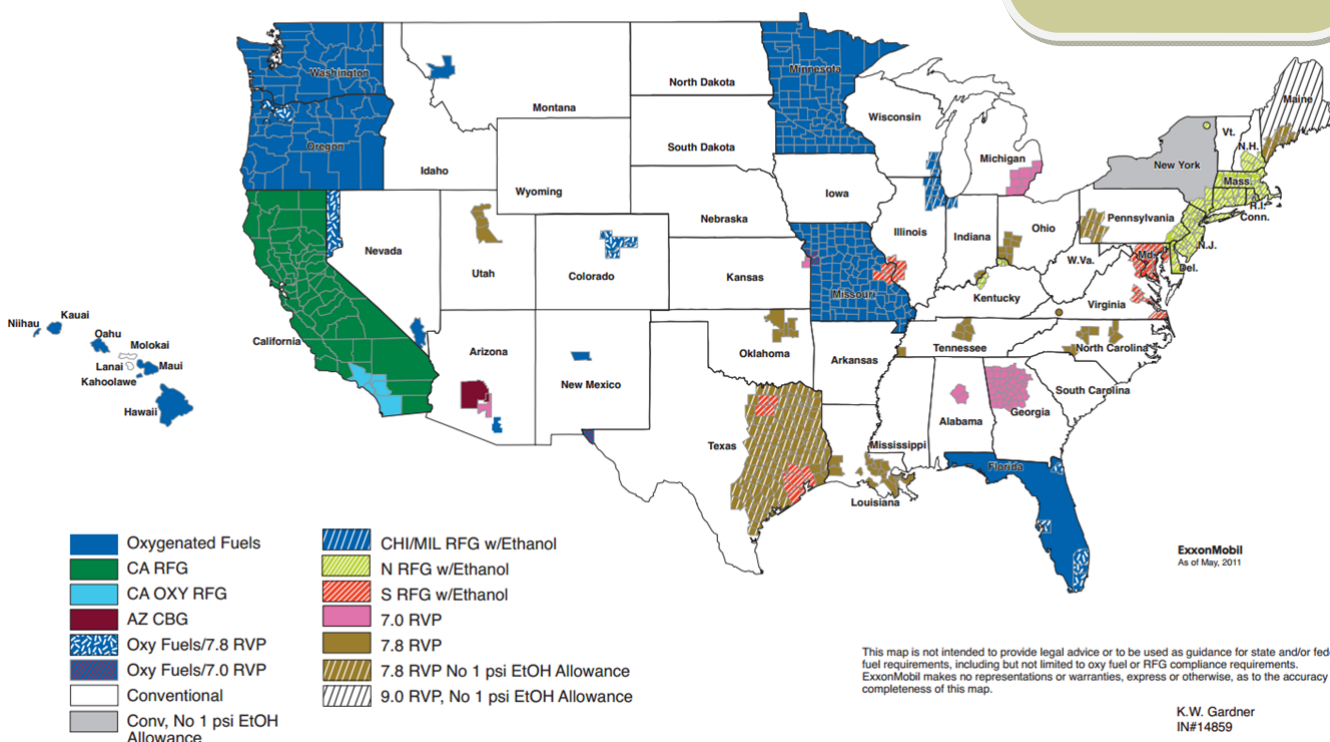
Reformulated gasoline (RFG) is gasoline blended to burn more cleanly than conventional gasoline and to reduce smog-forming and toxic pollutants in the air we breathe. The RFG program was mandated by Congress in the 1990 Clean Air Act amendments. The first phase of the RFG program began in 1995 and the second (current) phase began in 2000.

RFG is required in cities with high smog levels and is optional elsewhere. RFG is currently used in 17 states and the District of Columbia. About 30 percent of gasoline sold in the U.S. is reformulated.

Localities which were not required to use RFG but were in non-attainment for the ozone standard could opt-in to the RFG requirement.

Source: EIA

U.S. Gasoline Requirements

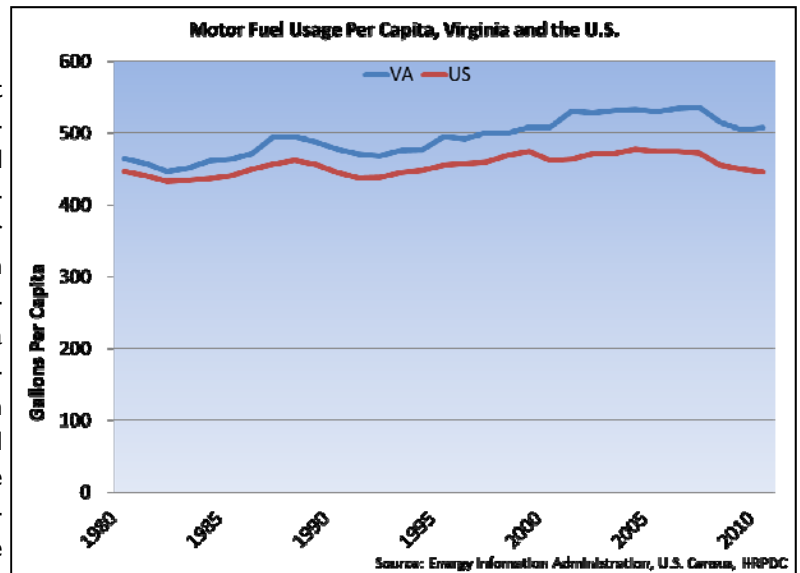


Taxes in Hampton Roads

Gasoline taxes play a role in Hampton Roads fuel costs, but since Hampton Roads has an excise tax rather than a sales tax on gasoline, this cost is fixed throughout price fluctuations. Virginia has a 17.5 cents-per-gallon tax on gasoline (though this can be refunded for boat, agricultural, or taxi uses). Drivers in Virginia also pay the 18.4¢ federal fuel tax. There has been discussion of using additional fuel taxes to pay for transportation projects in the region, and an additional 1¢ increase in fuel taxes would raise approximately \$8.5 million in regional revenue for transportation. Virginia currently has a lower tax rate than 40 other states including its six neighbors, and has not raised its gas tax since 1986. Tax Policy Institute data indicates that the state collected the 12th highest amount in state tax revenue despite the low tax rate (the state does have the 12th largest population).

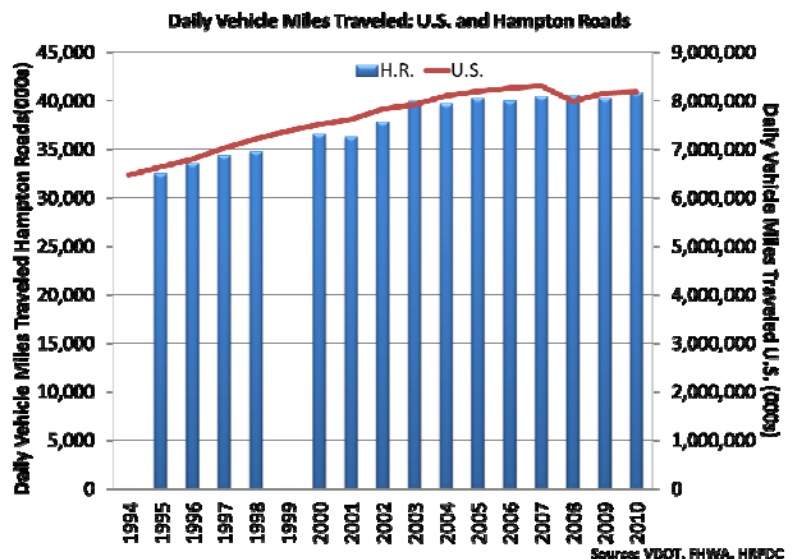
Consequences of Gas Prices in Hampton Roads

In Hampton Roads, one way to measure the impact of gas prices involves estimating per capita consumption and estimating the level of capital that is pulled from the regional economy for every ten cent increase in gas prices. As there is no data available for regional gas consumption, using fuel consumption estimates for Virginia from the EIA and census population data extrapolates to 506.6 gallons per capita per year. With a population of 1.67 million regionally and using the estimate of per capita consumption indicates that every 10¢ increase in gas prices would pull \$85M from the local economy, or .11% of the gross regional product. This impact would be equivalent to losing roughly 1,000 jobs according to the HRPDC's REMI model. While higher gas prices are often described as a tax on a local economy, they prove to be far worse than a tax because, unlike tax revenues, money spent on fuel will not flow back into the region.



Higher gas prices (and oil prices) have been associated with most of the recessions in the United States since 1970, including the great recession that began in 2007. Economists speculate one reason that oil prices have not damaged the economy as a whole is partly because the already lower level of economic activity is using less energy and because low natural gas prices are keeping overall energy costs manageable. Unfortunately, on a short time horizon gasoline usage is inelastic, meaning that consumers have very little ability to adapt to price changes. Daily Vehicle Miles Traveled follows the pattern of overall economic activity and growth, but as can be seen in the attached graphic, it shows very little variation with the price of gasoline.

While oil futures have declined recently as a result of lower levels of unrest in the Middle East and the Eurozone slipping back into recession, economists and the market have shown little success at predicting oil prices. The oil futures market only explains 16% of the market price 3 months to 1 year out.



Hampton Roads Economic Outlook: by James Clary

Slowly improving

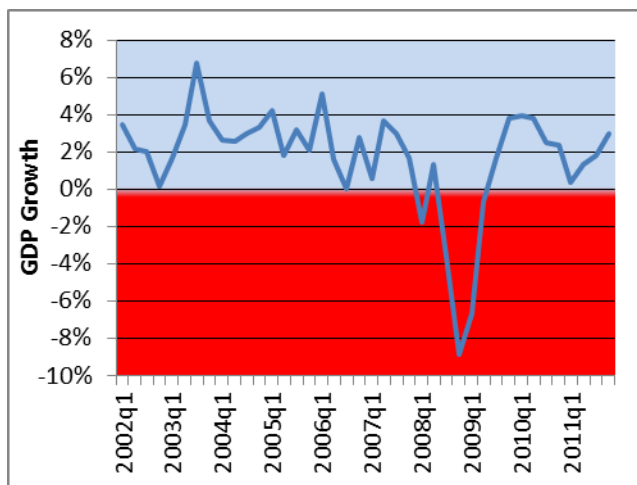
Increased retail sales and residential construction typically drive economic recoveries, and for the first time since the start of the recession, both indicators are moving in a positive direction in Hampton Roads. Retail sales have been increasing over the past two years, and are now at the highest level since February 2007 on a seasonally adjusted basis. While the region's recovery in this area lags national retail sales growth, there is reason to be optimistic that the combination of stronger conditions locally and nationally will pay dividends during the summer tourism season. Single family housing permits have reached their highest point in 12 months, 200 units higher than the average level this past year. While February is typically a strong month for permits, the seasonal adjustment factors indicate that this was an exceptionally strong month given recent trends. The return of both construction and retail sales employment would address the two industries that have been most significantly impacted this past recession.

Employment indicators are also generally positive. The unemployment rate and initial unemployment claims are down sharply over the past five months, and while payroll employment has yet to recover, payrolls typically follow retail sales activity. It is worth noting that this represents a return to normal rates of growth, which is good news; however, there will be a significant lag before the region recovers to previous peak levels of economic activity.

Hampton Roads Economic Indicators

GDP, Annualized Growth Rate

United States, 2002Q1 – 2011Q4, Quarterly

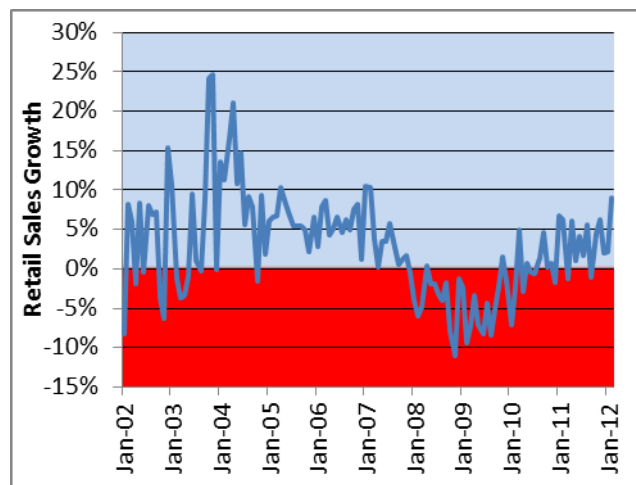


Source: Bureau of Economic Analysis, HRPDC

GDP: Gross Domestic Product combines consumption, investment, net exports, and government spending to determine the size and general health of the economy. The third estimate of GDP confirmed that the national economy expanded by 3.0% in the third quarter. This would be a good result during normal economic times, but is under the level that the U.S. has typically experienced following a recession. This confirms the view that the U.S. will experience a long slow recovery of a type that typically follows a financial crisis.

Retail Sales, Year over Year Growth

Hampton Roads, Jan 2002 – Feb 2012, Monthly



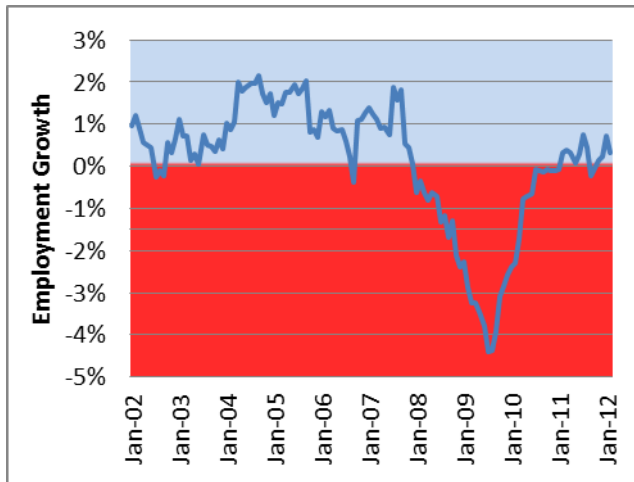
Source: Virginia Department of Taxation, HRPDC

Retail Sales: Retail sales, as measured by the 1% local option sales tax, serve as an indicator for consumption in the region. Since consumption composes 70% of economic activity in the US, the growth or decline of retail sales gives a strong indication of the direction of the local economy. Year over year sales are up 9% from Feb-2011 and 15.8% from Feb-2010, but remain 3.5% below the pre-recession peak. This compares to national retail sales which are 8.6% above the pre-recession peak.

Hampton Roads Economic Indicators

Employment, Year over Year Growth

Hampton Roads, Jan 2002 – Feb 2012, Monthly

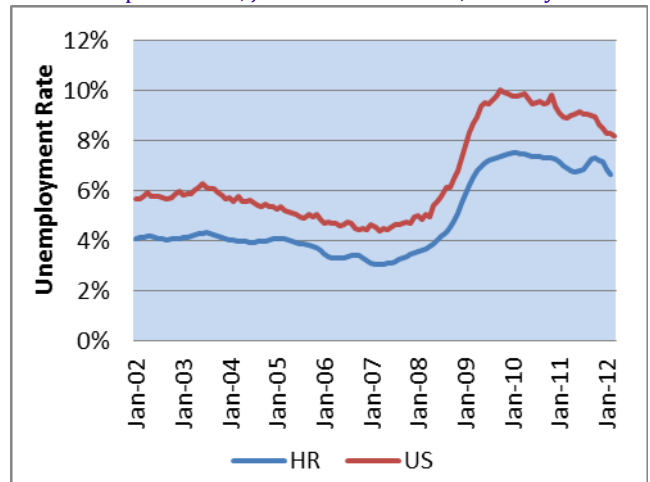


Source: Bureau of Labor Statistics, HRPDC

Employment: Non-agricultural employment is considered the best estimate of labor market activity by the National Bureau of Economic Research. Payroll employment has been increasing slowly over the past year, which indicates modest improvement in the employment situation. The employment levels are still more than 44,000 positions below the pre-recession peak of July-2007 and will take a significant length of time to recover

Unemployment Rate, Seasonally Adj.

U.S. & Hampton Roads, Jan 2002 – Feb 2012, Monthly

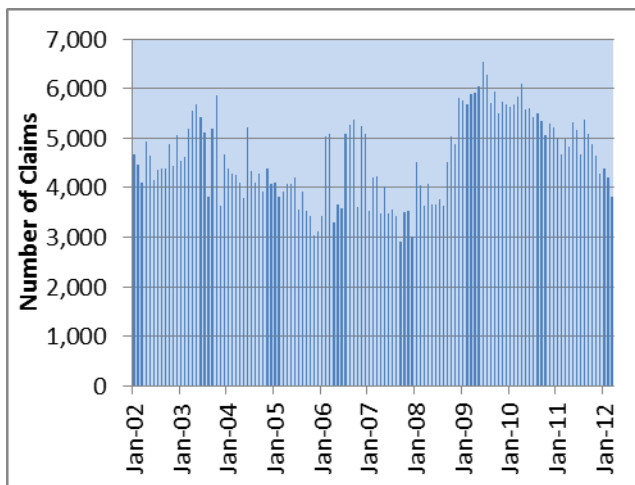


Source: Bureau of Labor Statistics, HRPDC

Unemployment Rate: The unemployment rate is the percentage of the population which is actively seeking work, but is unable to obtain a position. While peak unemployment occurred in January of 2010, another peak occurred in October of 2011 at 7.32%. Since then, the seasonally adjusted unemployment rate has declined significantly and now rests at 6.63%. During that time there has been a growing labor force and a slight decline in the number of unemployed.

Initial Unemployment Claims, Seasonally Adj.

Hampton Roads, Jan 2002 – Mar 2012, Monthly

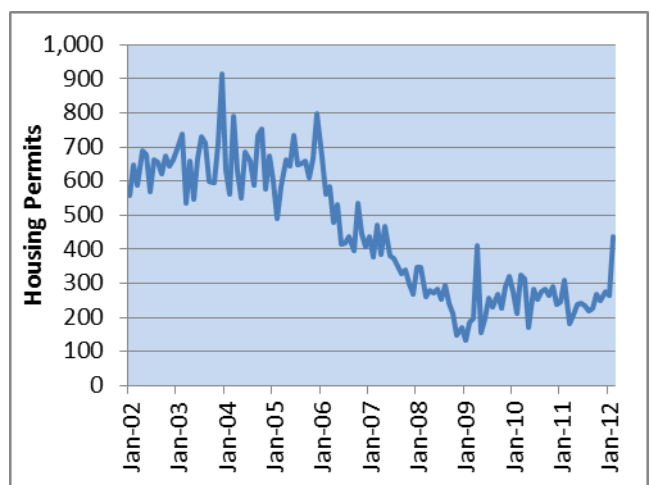


Source: Virginia Department of Labor, HRPDC

Initial Unemployment Claims: The number of Initial Unemployment Claims is a leading economic indicator, reflecting those who are forced to leave work unexpectedly and thus revealing the strength of the job market with little lag time. Initial unemployment claims in the region have fallen rapidly since August 2011, and are now below the long term average on both a seasonally adjusted and unadjusted basis. This indicates that firings have declined in the region. Note: initial claims are not impacted by benefits expiring.

Single Family Housing Permits, Seasonally Adj.

Hampton Roads, Jan 2002 – Feb 2012, Monthly



Source: U.S. Census Bureau, HRPDC

Single Family Housing Permits: Permit data indicates the level of construction employment and confidence regarding the future trajectory of the local economy. 542 homes were permitted in February (436 on a seasonally adjusted basis), well above recent levels. While there was a previous spike in home building during the recession coinciding with the housing tax credit, no one policy explains this jump in single family home building. This is good news for construction employment, but should not be construed as evidence for a recovery in home prices.